

# Resonance Inhibition Light-Recirculation Photovoltaic Conversion

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## Introduction

A novel approach is solicited for the conversion of photons into electrons which allows for a greater degree of efficiency whilst keeping fabrication costs reasonable.

## Abstract

The fundamental reason why certain compounds work better than others at converting photons into electrons is poorly understood by researchers. As this author has written in previous papers (*ibid.*), the creation of zones within electron clouds which are devoid of electrons is an important strategy for facilitating photovoltaic conversion. It is within these zones that conversions are most likely to happen.

However, there is also the problem of light being converted into heat before it may be converted into electricity. Photovoltaic (PV) materials are universally opaque and, therefore, if a light wave strikes the nucleus of an atom of the PV material, this constitutes a resonance event. The light is consumed, in this case, but is not converted into electrical energy.

Although we might overcome this problem by creating zones of positive charge within electron clouds, we might also try yet another unique strategy. To overcome this problem, I propose that glass microspheres be employed for the collection of light, coupled with a prismatic layer which channels light toward the left-most or right-most edge of the spheres. This would bring about a circulation of light within the transparent spheres.

In addition to this, a series of PV structures consisting of a single atom bound to an elongated, magnetically-active molecule trailing behind it whereas the overall molecule would feature a specific angular orientation within the spheres. The photovoltaically-active portion of the molecule would be leading edge of the molecule relative to the oncoming light (think: tip of the sword.) The supporting, magnetically-active atoms sitting behind the PV atom would focus their magnetism sharply toward the nucleus of the atom at the tip of the molecule, with a sufficiently narrow focus so as to facilitate the desired effect of allowing light to interact only with the electron cloud of that atom and not with the nucleus (think: A car traveling in the wake of another car and therefore enjoying diminished wind resistance, but with some wind still grazing the outermost parts of the vehicle.) With these molecules, the intent is to change the angular momentum of light moving toward the PV molecule to an exquisitely bespoke degree. The molecules would be tailored in order to deviate the angular momentum of the light waves sufficiently that resonance events could be prohibited in a high percentage of cases (ideally 100%,) but not so dramatically that light would be entirely prevented from interacting with the electron cloud(s) of the PV atom(s).

If we can exert such a fine level of control over the light, we can eliminate resonance events. Even if the rate of conversion on each pass is only 0.25%, the shape and optical properties of the microsphere would lend itself to facilitating repeated passes which would, eventually, result in the conversion of all of the light into electronic energy.

Once the electrons are generated, they have to be channeled out of the spheres using a method which does not result in resonance events. The best approach, in this case, would be to use electrical induction in order to exfiltrate the energy from the spheres into a below layer. Over short distances and using optimized materials, induction would be sufficiently efficient to justify its use, especially given the high degree of efficiency of the PV process, in this case.

## **Conclusion**

This novel approach to photovoltaics opens up new possibilities for practical PV use. Current industry-standard PV cells have limited lifespans, whereas a system based the aforementioned principles would have a conceivably unlimited lifespan, not to mention remarkable efficiency.